NAVFAC/NFESC ASBESTOS AND LEAD WORKING GROUP MEETING 24-26 FEBRUARY 1998

- 1. The NAVFAC/NFESC Asbestos and Lead Working Group Meeting was held 24-26 February 1998 at Naval Air Station Pensacola, FL.
- 2. The purpose of the meeting was to discuss asbestos and lead issues dealing with BRAC facilities, training, operations and maintenance plans, regulatory requirements, lessons learned, new technology, metrics, and non-housing lead removal problems. Working group discussions were geared toward developing solutions or policy statements for Navy wide implementation.
- 3. A meeting overview is provided below. Attachment (1) provides guidance developed during the meeting for asbestos in crawl space soils. Enclosure (2) is the list of attendees.

OVERVIEW

PRESENTATIONS

- 1. Mike Sanders, EFA Northwest, presented "Thermochemical Conversion of ACM into a Non-Regulated Waste". Using chemical additives and heat, asbestos containing materials are converted into non-ACM. Pilot Test to be conducted in CY98 at Puget Sound NSY.
- 2. John Knox, EFD South, presented "Construction Environmental Compliance Team". CECT formed to identify root causes of environmental non-compliance and to implement corrective measures to prevent future non-compliance. Asbestos Process Action Team established to address issues of inadequate surveys, improper notification, and improper work practices. Revised Asbestos chapter of A/E Guide and other related documents to correct these problems.
- 3. Gary Hamilton, PWC Washington, presented "Asbestos/Lead Projects and the Hazard Abatement Program Current Policy". Gary discussed the current methods for determining Risk Assessment Codes (RACs) for asbestos and lead projects.
- 4. Gloria Page Hamly, NAVSEA, presented "Navy Asbestos Litigation Support". Gave brief organizational history of how the NAVSEA Asbestos Litigation Support Office (NAVALSO) became responsible for litigation support Navy-wide. Maintains the Asbestos Litigation Database Query System that provides the ability to search and retrieve documents collected in response to asbestos litigation.
- 5. Joy Erdman, CNO N454, presented information on the status of OPNAVINST 5100.23E draft. Final comments have been received from Echelon 2 commands, comments are being reviewed and incorporated. Planned revision of Chapter 15 Respiratory Protection due to new OSHA respirator standard of Jan 98.
- 6. Bryan Nix, U.S Army, Office of the Assistant Chief of Staff for Installation Management, presented "U.S. Army Lead Hazard Management". The goals of the program are to ensure lead hazard free,

- safe, healthful living and working environments. The program focuses on target (pre-1978 housing) and child-occupied facilities.
- 7. Victoria Belfit, U.S. Army Center for Health Promotion and Preventative Medicine, presented "Lead Hazard Management Hands-On Skills Trainer (HOST)" computer based training program. Developed to train personnel who perform risk assessments. Will be used for both initial and refresher training. Ms. Belfit also presented information on the risk associated with lead on playground equipment.
- 8. Jill Hamilton, NFESC, presented information on the NFESC asbestos and lead web pages. The web sites were developed to provide current information on asbestos and lead issues.
- 9. Jim Long, PWC Norfolk, presented "Painter-L" Lead Hazard Management Software. Developed by PWC Norfolk, through an Army/Navy Partnership, to collect information from paint inspections and risk assessments and produce a Lead Hazard Management Plan.
- 10. Wade Jensen, NAVFACHQ, presented information on the development of the "Model Process Map for Lead Hazard Reduction". Included information on establishment of a Lead Steering Committee to develop the details of the Model Process Map and address any additional lead management policy issues.
- 11. Terri Mosteller, NAVOSHENVTRACEN, presented information on the EPA accredited asbestos contractor/supervisor course that they currently provide. Planning on expanding their asbestos curriculum in FY99 to include four additional accredited courses. Courses will be provided regionally and help significantly reduce the Navy's training costs.
- 12. Nick Rowan, NAWS China Lake, presented "Asbestos Crimes" which outlined a major asbestos contamination of 12 housing units by contractor removing asbestos without using proper procedures and the steps taken to remedy the situation.
- 13. Carla Sanders, NAS Brunswick, presented information on the activity Asbestos and Lead Management Programs.
- 14. Dave Chavez, NFESC, presented information on the NFESC document *Quality Assurance for Lead Paint Removal*. He gave an overview of how the document was developed and the current status. The document is designed to help personnel follow the requirements of NFGS 13283, *Disposal of Lead-Containing Paint*, and uses checklists to emphasize important criteria.
- 15. Tom Stephan, North EFA, demonstrated a CAD/GIS Computer System for the collection asbestos inventory information and to aid in the management of an Asbestos Operations and Maintenance Plan.

PRESENTATION HANDOUTS

- 1. Thermochemical Conversion of ACM into Non-Regulated Waste in the Pacific Northwest (POC: Mike Sanders, EFA Northwest)
 - ARI Asbestos Containing Material Conversion System Drawing
- 2. Construction Environmental Compliance Team (POC: John Knox, SOUTHDIV)
 - "Draft" Section 11 of A/E Guide, "Deliverables, Part A: Asbestos Survey"
 - "Draft" Design-Build Specification, "Section F20, Selective Demolition"
 - "Draft" Asbestos Policy for Facility Design and Construction Southern Division
 - NFGS 13281A Engineering Control of Asbestos Containing Materials
 - NFGS-S-00300 Information Available to [Bidders] [Proposers]
- 3. Deriving Risk Assessment Codes (RACs) for Health Hazards (POC: Gary Hamilton, PWC Washington)
- 4. Navy Asbestos Litigation Support (POC: Gloria Page Hamly, NAVSEA)
- 5. OPNAVINST 5100.23E draft (POC: Joy Erdman, CNO N454)
- 6. U.S. Army Lead Hazard Management (POC: Bryan Nix, U.S. Army)
 - Army Regulation AR420-70, Facilities Engineering Buildings and Structures
- 7. Lead Hazard Management Hands-On Skills Trainer (HOST) (POC: Victoria Belfit, U.S. Army)
- 8. Lead on Playground Equipment (POC: Victoria Belfit, U.S. Army)
 - U.S. Army Memorandum, Risk Associated With Lead On Playground Equipment
 - Information Paper, Standards for Lead in Paint, Dust, and Soil Associated with Playground Equipment
- 9. "Painter-L" Lead Hazard Management Software (POC: Jim Long, PWC Norfolk)
- 10. Model Process Map for Installations Engineering Support-Environmental Services (POC: Wade Jensen, NAVFACHQ)
- 11. NAVOSH Environmental Training Center Asbestos Courses (POC: Terri Mosteller, NAVOSHENVTRACEN)
- 12. Asbestos Crimes (POC: Nick Rowan, NAWS China Lake)
- 13. Naval Air Station Brunswick Instruction (NASBINST) 5100.32C, Chapter 7 Asbestos Program and Chapter 12 Lead Program (POC: Carla Sanders, NAS Brunswick)
- 14. Quality Assurance for Lead Paint Removal (POC: David Chavez, NFESC)
 - NFESC TM-xxxx-ENV, Quality Assurance for Lead Paint Removal Contracts

DISCUSSION SESSION SUMMARY

Eight discussion sessions were held over the course of the three-day meeting. Teams comprised of PWC, EFD, EFA, and activity representatives were established to further discuss topics and develop recommended actions. The following provides a summary of the discussions, recommendations, and actions:

1. ASBESTOS INSPECTIONS/REINSPECTIONS.

- Inspect prior to demolition/renovation. Ensure destructive testing occurs this helps reduce the number of modifications and change orders on construction contracts.
- Let APM determine if required. If not conducted then designate all suspect material as presumed asbestos containing material (PACM).
- Use electronic systems to aid in managing asbestos tracking. Allows easy access to information on materials containing asbestos.
- If re-inspections are not conducted, need to validate initial inspection prior to any demolition/renovation projects.
- If re-inspections are conducted, do in phases, such as 1/3 of the buildings every year. If asbestos in buildings are in good condition can modify this to re-inspect every 1/4 or 1/5 of the buildings, etc. Determination of number of phases is left up to the APM.
- Whether or not inspection/re-inspection occurs, ensure periodic surveillance is conducted. Use safety/facilities/AIS/custodial as part of the periodic surveillance program.
- For BRAC properties, do inspections before turning buildings over (may also need to do reinspection/clean-up prior to allowing potential recipients to go through building)

Recommendations:

1. Develop/publish decision tree and additional guidance for helping APM determine need for inspection/reinspection (Action: Discussion Team #1/NFESC).

2. LEAD INSPECTIONS

- Require any hazard assessments performed for the purpose of determining resident hazard exposure to conform to 40 CFR 745. Actual Risk Assessment protocols should be taken from HUD Guidelines.
- Prior to beginning work which affects a materials surface:
 - Perform a thorough, project specific survey and evaluation during the site investigation phase. (Required by OSHA)
 - Survey all surfaces to be disturbed and surrounding surfaces that have not been previously surveyed or identified to determine lead levels and characterize the site.
 - Presence of lead can be determined by any valid test method. Any coating above 0.06% lead by weight (iaw 5100.23 E draft) will be considered lead containing and invoke applicable worker protection for the work practice to be performed.
 - Extra caution shall be taken to avoid disturbing any surrounding surfaces that are determined to be lead containing

Clearance Samples

- Recommend collection of pre-work, background dust wipe samples to hold in case the background information is required. These samples can be analyzed if needed or disposed of after project completion.
- Use 200 µg/ft² for dust clearance level iaw OSHA compliance directive.
- Soil clearance Pre-work samples used as baseline for post-work clearance.

Recommendations:

1. Develop guidance on when Lead Inspections are required (i.e. prior to maintenance work, in older buildings, etc.). Identify difference between HUD and OSHA requirements. (Action: Lead Hazard Reduction Committee (LHRC)/NFESC)

3. ASBESTOS IN CRAWL SPACES

- Treat as accessible per EPA's definition of routinely accessed by occupants and or maintenance personnel
- BRAC turnover clean to 4" then put a cap over it. Informed new building owner of location
- Need to inform contractors of location of ACM/condition, etc. Also, require personnel to suit up whenever they enter contaminated space.
- Check with SHPO (State Historical Preservation Office) in case artifacts are under old buildings where soil is being removed.
- Use EPA approved sampling pattern for PCB in soil to determine asbestos contamination. May
 want to reduce size of grid pattern or amount of space sampled so only a small portion of truly
 contaminated soil is affected. Additionally take four samples at each side of building for
 appropriate background levels.

Recommendations:

1. Develop guidance for asbestos in crawl spaces (**Action: Discussion Team #3**). See Enclosure (1).

4. OPNAVINST 5100.23E Draft

- Comments/recommendations were collected for chapters 17 and 21

Recommendations:

1. Provide list of comments to CNO for incorporation into 5100.23E (Action: NFESC)

5. ASBESTOS REMOVAL PRIOR TO DEMOLITION

- State and local requirements are generally more stringent when applying guidelines for this
 initiative. In locations where these requirements are not more stringent the decision is left to
 interpretation and this is where the potential problem exists.
- Focus on the removal process instead of the material in question. Approach will need to be in a decision tree formatting. Will depend on type of material and location.
- If left in place may need to classify entire waste stream as asbestos containing.
- Need to ensure local regulators allow asbestos to be left in place. Have them agree prior to beginning a project.

 Need guidelines of type of worker protection required during demolition process. For lead materials need to determine when TCLP is required.

Recommendation:

- 1. Establish team to research new technologies and techniques for demolition. (Action: Asbestos Task Force (ATF)/NFESC)
- 2. Develop guidance for determining if ACM can be left in place prior to demolition, which includes all worker protection and disposal requirements. Include decision tree which will outline various options (Action: ATF)

6. SHARING LESSONS LEARNED

- Pinpoint distribution to APM's of successes and failures. Establish email system with all APMs to get help, discuss regulations, etc.
- Require APM to attend NAVFAC/NEHC risk communication course
- Develop an APM/Lead management-mentoring program where new APMs or activities newly developing program can go to a base for a week or two to discover how a base with a welldefined program works.
- Raise visibility of problems at other bases to help educate CO's. So we don't keep making the same mistakes at different places.
- Inadequate contract Oversight Navy doesn't administer contract well. Improve contract execution at the field level

Recommendations:

- 1. Develop template for fields of information would like activities to submit to share successes and failures. (Action: NFESC)
- 2. Develop email system to help raise awareness of various problems associated with asbestos management and removal. (Action: NFESC)

7. A/E GUIDES

- Designer/Planners/Inspectors must have EPA accredited training
- Require comprehensive, project specific, hazardous materials survey of all impacted areas, regardless of location. Require destructive testing.
- Require categorization of all waste streams generated by the project.
- Specific drawings for the asbestos or lead removal should be specified as AR (asbestos removal) or PB (lead removal).
- Drawings should include both positive and negative results, as well as, the condition of the material and any additional material in the proximity to the work that may not be affected.

Recommendation:

- 1. Develop standard requirements for asbestos and lead chapters of the A/E Guides. Regions can modify to include local requirements as necessary. (Action: NAVFACHQ/ATF/LHRC)
- 2. Develop standard operating procedure (SOP) for taking TCLP samples to characterize waste stream. (Action: LHRC)

8. STRATEGIES TO REDUCE COST

- Allow real time access to public laws to allow for quick and easy update of contract materials, when necessary.
- Standardize O&M plans throughout the Navy
- Inspections:
 - Assume positive for lead especially in pre-1978 housing
 - Do all maintenance work where paint is affected using wet methods
- Develop metrics to track the costs of change orders. Compare the cost of using 3rd party monitoring.
- Require planners/estimators to be trained in costs required for lead and asbestos removal.
 Ensure included in all projects.
- Require A/E to use previous sampling data to identify, as a minimum, positive materials
- Educate ROICC to use knowledge base at EFD/EFA. Should have change orders which impact asbestos/lead reviewed by accredited personnel.
- Have NAVOSHENVTRACEN provide Navywide accredited asbestos training.

Recommendation:

- 1. Include links to asbestos/lead regulations/public laws on NFESC web site. (Action: NFESC)
- 2. Ensure Navy-wide distribution of NFESC O&M template. (Action: NFESC)
- 3. Develop metrics to track costs of change orders. (Action: EFD/EFA/PWC)
- 4. Develop metrics to track costs of 3rd party monitoring. (Action: EFA North)
- 5. Develop EPA accredited training. (Action: NAVOSHENVTRACEN/NAVFACHQ)

ASBESTOS IN CRAWL SPACE SOILS

1. ASBESTOS IN SOIL

Asbestos contaminated soil in crawl spaces usually results from previous maintenance or abatement activities. Usually, thermal system insulation or other asbestos-containing materials (ACM) have been damaged or removed and has been distributed into the soil by further maintenance activities. Any scheduled ACM removal in crawl space areas must assure evaluation of soil conditions and proper protection of soil during removal. Naturally occurring asbestos may also exist in soil.

Issues relating to asbestos-contaminated soil are:

- Exposure potential to workers and contractors
- Regulatory definition of ACM
- Sampling and Assessment
- Contracts
- Confined spaces and other hazards
- Construction Management

1. EXPOSURE POTENTIAL

Asbestos exposures have been historically documented in crawl spaces at various naval activities. The types of work being performed and exposure potential triggers OSHA standards for asbestos. Where exposures have either been documented or no exposure assessment has been performed, the following is required:

- Notification and labeling: Warning signs must be posted at entrances to mechanical areas.
- Training: Asbestos awareness training must be performed (16 hour)
- Monitoring: Exposure monitoring (assessment) is required initially and annually thereafter
- Respiratory Protection & PPE: Required where exposures documented or no exposure assessment performed.
- Presumed ACM: Where bulk samples have not been collected to determine the presence of asbestos, the crawl space must be presumed to contain asbestos.

1. REGULATORY DEFINITION OF ACM

Asbestos is typically defined by OSHA and EPA as containing >1% asbestos by weight. This definition focuses on manufactured product, such as: pipe insulation or floor tile. The analytical method specifies asbestos containing "building" materials. Laboratories usually provide analytical disclaimers for non-building materials (debris, soil, or settled dust).

EPA also defines regulated ACM (RACM) as anything that either is asbestos or is contaminated with asbestos. In EPA's Demolition Decision Tree Guidance of June 94, discussion of asbestos being RACM includes even less than 1% unless the building owner can document that the original material contained less than 1% (i.e. pipe insulation).

1 Enclosure (1)

Crawl space asbestos-contaminated soil is defined as soil, which contains asbestos in amounts even less than 1%.

EPA defines "accessible" as disturbance of materials by building occupants or custodial or maintenance personnel in the course of their normal duties. Crawl spaces are considered accessible due to entry for maintenance purposes.

2. SAMPLING AND ASSESSMENT

Sampling and assessment of crawl spaces for soil contamination or removal requires special attention. Standard AHERA bulk sampling protocols may not be adequate to determine existing conditions. Three types of sampling my be performed:

- 1. Limited surface bulk sampling of suspect debris may be performed to identify contamination or document improper removal methods.
- 2. Specific sampling to determine abatement (removal) criteria
- 3. Control or background sampling outside of the crawl space area.

Limited sampling is straightforward, based on visual inspection and discreet soil or debris bulk sample collection. Specific sampling requires determining the depth and extent of soil contamination. This sampling will develop a topographical type map of the depth of contamination. Samples should be collected in a grid work layout and identified by depth (i.e., NW corner, grid 1 depth 1, 2, 3, 4 inches). A minimum of 9 core samples is recommended. Samples should be separated in 1-inch depths and analyzed until no asbestos is detected. The EPA sampling scheme for PCBs is recommended as a sampling strategy guide. Control or background core samples should be collected outside of the crawl space area. Four samples should be collected to represent the compass points (N, S, E, and W). Samples should be collected to similar depth as crawl space samples.

An important part of sampling and assessment is to determine if there is a pathway or potential for building contamination. This includes access points in the building or chases/shafts or plenums that may allow air movement and contamination into the building. If either crawl space access or building air pathway is identified as a potential exposure source to building occupants, notify the activity asbestos program manager (APM) or designate activity representative immediately.

1. CONTRACTS

Proper design and evaluation is required for removal projects involving crawl space work. Section 4 shall be used to develop the design scope. Where contracted maintenance services are performed, OSHA asbestos standard compliance as indicated in Section 2, must be specified in the contract documents (i.e., phone installation, plumbing, etc.). All facility related contracts involving crawl space entry should contain appropriate paragraphs or sections regarding potential exposure to asbestos. The following section addresses other safety hazards, which must be considered for crawl space entry. Appropriate evaluation and assessment is required for crawl space entry work.

Enclosure (1)

2. CONFINED SPACES AND OTHER HAZARDS

Other safety and health hazards require evaluation prior to crawl space entry, which include:

- Confined space entry
- Hot work (welding, torching, burning)
- Lock out/Tag out (electrical, steam, etc.)
- Heat Stress
- Hazard Communication
- Other applicable OSHA standards

Ensure proper evaluations are performed to thoroughly address the above items.

1. CONSTRUCTION & MANAGEMENT

There are three options to address asbestos-contaminate soil in crawl spaces:

- 1. In-place management with controls
- 2. Soil removal
- 3. Encapsulation/Enclosure

In-place management with controls requires following the OSHA requirement outline in Section 2. Where building contamination has been identified from crawl space access or air entertainment from crawl space plenums, in-place management is not an option. Corrective action is required to eliminate exposure to building occupants. Maintenance service contracts must contain appropriate paragraphs where personnel will enter crawl spaces to perform work. Significant higher hourly rates will be charged for trained contract labor required to enter asbestos –contaminated or PACM areas.

Soil removal projects shall be sampled and assessed as identified in Section 4, and properly designed by an EPA accredited Asbestos Project Designer. When crawl space soil removal will be performed, soil is required to be removed until no asbestos is detected as indicated in Section 3. If removal of soil reaches the building foundation, regulatory approval (EPA/State) may be required to stop soil removal and encapsulate or enclose the soil. Some innovative soil removal technology is available, such as using trailer mounted vacuum systems equipped with High Efficiency Particulate Air (HEPA) filtration.

Encapsulation and/or enclosure options include using a geo-textile membrane, which is covered with at least 4 to 6 inches of sand or gravel or poured concrete. The geo-textile and sand or gravel is considered encapsulation. Poured concrete is considered enclosure, which is a permanent remedy. Soil conditions, water table and access must be evaluated prior to determining which method will be used. Regulatory approval (EPA/State) may be required prior to enclosure or encapsulation. Soil encapsulants are not stable for crawl spaces that require routine entry. Typically, some soil removal or gross debris clean up is required prior to encapsulation or enclosure.

3 Enclosure (1)

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Enclosure (2)

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3 Enclosure (2)